

Abstract

Charles University in Prague, Faculty of Pharmacy in Hradec Králové

Department of: Pharmaceutical technology

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Title of Thesis:

Biodegradable polymeric nanoparticles preparation

The present scientific progress in an important rate conduces to nanomedicine development, which aims to reengineering of cancer pharmacotherapy and other substantial diseases. The main intention of this graduation thesis is the study of surface-active chemical's effects on the final properties of nanoparticles. The theoretical part is focused on the nanoparticles like drugs vehicles, synthesis of biodegradable nanoparticles, themselves applications in the cancer therapy, diseases accompanied by inflammations, vaccination and for another different purposes. The theoretical part also contents characterization of active and passive goal-directed distribution by diseases, microencapsulations, synthesis of nanoparticles by polymerization and from previously synthesized polymers and definition of physical-chemical properties of nanoparticles. The experimental part is more extensive and concerned with the optimalization of reaction conditions of nanoparticles synthesis, with selection of advisable concentration and type of surfactant. In the experimental part were used five different types of surfactants in three concentrations. The experimental part includes tables and graphs, which balance different types of surfactant on the particle size, zeta potential and polydispersity index of nanoparticles.